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ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

Re: Serial No.: 10/042,146
Applicant(s): Matthew BATE et al.
Filing Date: January 11, 2002
For: DIGITAL DATA SYSTEM
Group Art Unit: 2131
Examiner:

SIR:

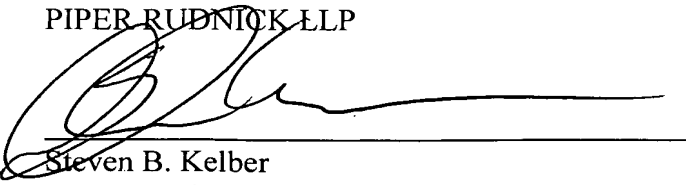
Attached hereto for filing are the following papers:

**REQUEST FOR PRIORITY
CERTIFIED COPY OF UNITED KINGDOM PATENT APPLICATION
NUMBER 0100753.3**

Our check in the amount of \$ 0 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary extension of time to make the filing of the attached documents timely, please charge or credit the difference to Deposit Account No. 50-1442. Further, if these papers are not considered timely filed, then a request is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

PIPER RUDNICK LLP



Steven B. Kelber
Attorney of Record
Registration No.: 30,073

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Matthew BATE et al.

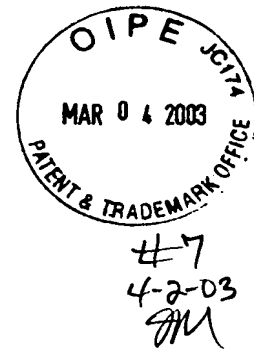
ART UNIT: 2131

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EXAMINER:

FILED: January 11, 2002

FOR: DIGITAL DATA SYSTEM



REQUEST FOR PRIORITY

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

- ☐ Full benefit of the filing date of U.S. Application Serial Number [US App No], filed [US App Dt], is claimed pursuant to the provisions of **35 U.S.C. §120**.
- ☐ Full benefit of the filing date of U.S. Provisional Application Serial Number , filed , is claimed pursuant to the provisions of **35 U.S.C. §119(e)**.
- ☒ Applicants claim any right to priority from any earlier filed applications to which they may be entitled pursuant to the provisions of **35 U.S.C. §119**, as noted below.

In the matter of the above-identified application for patent, notice is hereby given that the applicants claim as priority:

<u>COUNTRY</u>	<u>APPLICATION NUMBER</u>	<u>MONTH/DAY/YEAR</u>
UNITED KINGDOM	0100753.3	JANUARY 11, 2001

Certified copies of the corresponding Convention Application(s)

- ☒ are submitted herewith
- ☐ will be submitted prior to payment of the Final Fee
- ☐ were filed in prior application Serial No. filed
- ☐ were submitted to the International Bureau in PCT Application Number
- ☐ (A) Application Serial No.(s) were filed in prior application Serial No. filed ; and
(B) Application Serial No.(s)
 - ☐ are submitted herewith
 - ☐ will be submitted prior to payment of the Final Fee

Respectfully submitted,

PIPER RUDNICK LLP

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INVESTOR IN PEOPLE

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Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

CERTIFIED COPY OF PRIORITY DOCUMENT

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

Dated 19 February 2003

Request for grant of a patent

(See the notes on the back of this form. You can also get
an explanatory leaflet from the Patent Office to help
you fill in this form.)

The Patent Office

Cardiff Road
Newport
Gwent NP9 1RH

Fee: £0

1. Your reference

42431/IML

2. Patent application number

(The Patent Office will fill in this part)

0100753.3

11 JAN 2001

3. Full name, address and postcode of the or of
each applicant (underline all surnames)

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RH20 2LG

Patents ADP number (if you know it)

If the applicant is a corporate body, give the
country/state of incorporation

4. Title of the invention

Data System

5. Full name, address and postcode in the United
Kingdom to which all correspondence relating
to this form and translation should be sent

~~Reddie & Crose~~
~~16 Theobalds Road~~
~~LONDON~~
~~WC1X 8PL~~

AS ABOVE.

Patents ADP number (if you know it)

91001

6. If you are declaring priority from one or more
earlier patent applications, give the country
and the date of filing of the or of each of these
earlier applications and (if you know it) the or
each application number

Country

Priority application
(If you know it)

Date of filing
(day/month/year)

7. If this application is divided or otherwise
derived from an earlier UK application,
give the number and the filing date of
the earlier application

Number of earlier application

Date of filing
(day/month/year)

8. Is a statement of inventorship and of right
to grant of a patent required in support of
this request? (Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an
applicant, or
 - c) any named applicant is a corporate body.
- See note (d))

NO

Patents Form 1/77

Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document.

Continuation sheets of this form

Description 20

Claim(s) 0

Abstract 1 0

Drawing(s) 0

Abstract incl on Page 1 of desc

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

I M Loveless

Date

11 January 2001

12. Name and daytime telephone number of person to contact in the United Kingdom

I M LOVELESS
020-7242 0901

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or such direction has been revoked.

Notes

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- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
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Abstract

A system for storing, moving and categorising digital data in a way that enables it to be utilised only by those who have permission so to do.

Key features of the device include the ability to respect a single item of digital data as being a Master Item and make copies of the Master Item for distribution in a way that retains the integrity of the Master Item; should the Master Item be modified, all the copies will be modified similarly. If the Master Item is deleted, so are the copies. This system is an essential aspect of the device. For the purposes of this document, the items of Data will be known as Blobz (pl).

Another key feature of the device is the way in which items of Data can be referenced by including them in a conglomeration, known here as a 'Smart Blob'; this is a method for logically linking different digital data together in a meaningful way. An example of how the device would function in this way would be tasks ordered in a 'critical path' in a project.

Introduction

The Essentially Different Blobz Solution is a state of the art digital data management solution that is designed to intelligently distribute all forms of data and functionality via a central caching logic.

As a Client/Server technology, the system is dependent on intermittent Internet connections that enable data and functionality to be transferred between the two entities. This connection may be occasional because of the intelligent caching functionality to be described later.

The tools used to enable this functionality are the Java interpretive language with its ability to enable executable programs to run on any suitable platform and the XML Meta language that enables the construction of complex data systems that can transfer data easily and with flexibility between like systems and legacy infrastructures.

As the business logic of the solution dictates, the system will appear as a network of nodes run by clients of Essentially Different Ltd and supplied on an Application Service Basis. Each of these nodes will be client-developed solutions marketed as a whole by Essentially Different as a functional network upon which services can be deployed and accessed and also individually as a part of their own distinct business model.

Updating of the executable systems that form the Home Server and the Client Programs will take place through the intelligent caching system described later in the document and a unified command library.

The range of services available to the network will consist of those selling, renting or giving away media, data, applications, services and functionality that are all dependent upon access via temporary interfaces such as the web or WAP phones or our own client program.

The client program (initially available for the Java and Palm platforms) will act as an interface between an end-user and all of the data with which they interact. At its most basic level it will serve as a connected PIM (Personal Information Manager) that allows personal data to be held on the Central Server and cached to all a user's devices via the Internet and any proprietary device caching systems. Media, encapsulated databases and web content are considered a part of this 'Home' data and intelligently cached in a similar way. The unique

security features described later in the document mean that this 'amalgamation of user data' ensures the rights-protection of the data.

The navigational/executive device that forms the interface between the software and the user will appear the same regardless of access device. The central feature being a 'Now...' button that hovers over a time chart that can be serially calibrated as representing minutes, hours, days, weeks months etc. This is a way of orienting the user in time in a way that has not been done before; it will show the user what tasks should be performed, what outside influences (such as visits, events etc.) are imminent and if any element is overdue. When activated by a mouse click, a key press, an active cursor positioning or by a biometric system, a menu appears that lists the options for interacting with the system at that time. The options will be described in a way that makes them appear as requests preceded by the 'Now...' inscription on the button.

The most important model in understanding the capabilities and functionalities of the solution is the way in which data is dispersed onto databases and then re-formed. We call this reformed data Blobz. Blobz can be media items, web content, contact data; in fact any digital information with which a person interacts. As the central model in the data scheme Blobz will be briefly described below.

Blobz

Blobz themselves are encrypted/compiled xml documents that contain information about where they came from, who created them and who has the right to access them. Their functionality stems from the fact that they carry sequences of addresses to the data they represent, which is carried on the Home Server and cached to other servers or local devices. It is a simple rule that it is only the Blob document that addresses the actual data; everything else addresses the Blob either individually or as a logical group via a Smart Blob.

There will be three, distinctly marketed but technically similar forms of Blob.

Data Blobz are an encapsulated database that offers the ability to search the same database at your desktop that you can on the road. When a Data Blob is been created, it receives a default refresh timescale code that ensures that the data is kept up-to-date on a regular basis. Text-based documents are also Data Blobz; all become XML documents.

Media Blobz are encrypted media such as sound, animation or video in formats such as mp3/4, mpeg 2/3/4 and Flash. Standard software Media Players will be able to play Media Blobz as our client decodes them into a streaming form.

Smart Blobz contain the addresses of Data and Media Blobz and their relationship to one-and-other. This is how it is possible to capture complex procedural data using our solution. A language of procedure, time and relationship connects the Blob addresses within the Smart Blob. This system will be used to enable functionality such as complex collaborative projects, interactive guides or multimedia releases that include music, video, artwork, lyrics, bibliography etc.

Advantages and Innovations

As the first fundamentally secure platform technology, it is the first server that can co-ordinate the deployment of all types of digital data from texts to music to video across all platforms in complete security while protecting privacy and intellectual capital rights.

- ◆ The Essentially Different Blobz Solution is the first unified platform to enable providers of

services and content to develop their own application with minimal effort that will deploy their wares safe in the knowledge that they will be paid.

- ◆ With current solutions, if you wanted to deploy a total, end-to-end solution for the interaction between humans and data, you would have to purchase a web server, an application server, an e-mail server and other solutions such as WAP and SMS servers if mobile access is required. You would then have to build the applications and build or buy any middleware solutions that may be required.
- ◆ The solution does not differentiate between types of data; text, video, music, sound, executable files, software and any other type of digitally held data can be protected and carried by the network.
- ◆ The central feature of the interface is a button or device marked 'Now...' that is positioned graphically over a time chart that can be serially calibrated as representing minutes, hours, days, weeks, months etc. This is a way of orienting the user in time in a way that has not been done before; it will show the user which tasks should be performed, what outside influences (such as visits, events etc.) are imminent and if any element is overdue. When activated, the 'Now...' button lists the tasks that can be performed at that time such as communicating, creating, modifying and enacting.
- ◆ The device outlined is capable of linking and prioritising tasks within a calendar in new and innovative ways including differentiating between the urgency and importance of a task.

With our solution, all the elements for building a human to human to data interaction system are already in place ready to be configured and branded, all that is required is to visit the site of one of our ASP providers or developers. This solution is possible because of its system of actively caching, validating and verifying data across networks.

Data Handling

The way in which the solution functions pivots around the way in which it handles data. We have described below the structure of the data scheme utilised by the solution.

The structure exists in two forms; as an amalgamated community database on the Home Server and as a cached subset for the individual end user on a local device. In either case, the structure and addressing systems are identical.

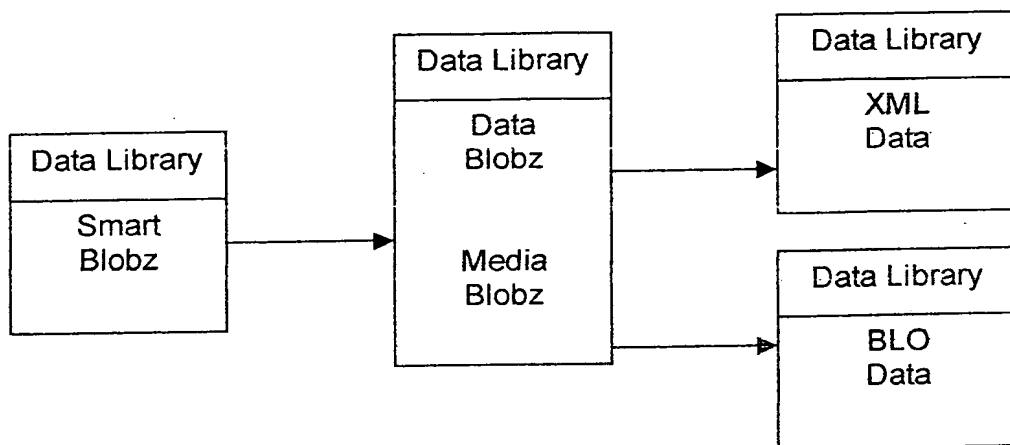
The standard model throughout the solution for description and addressing of data is the aforementioned Blobz Model.

Data Scheme

There are three levels of data storage on each server and caching client.

Fig 1.

Data Scheme – Overview



As you can see from this architectural schematic, the data is organised into three levels; Smart Blobz, Blobz and Data.

Only the Blobz level references the actual data.

Level 1 – Data

At this level there are two libraries, the first being an XML library that consists of all the text-based data in forms created from templates that adhere to a set schema. This collection of databases is compiled into a proprietary format and split into a library of files for the sake of safety and effective storage.

The second data library is a Binary Large Objects database. This database is where all the music, video, animation and bitmap art files are amalgamated. As with the XML library, this database is then compiled into a proprietary format and then split into a library of files for the sake of safety and effective storage.

Only items in Level 2 reference the data at this level.

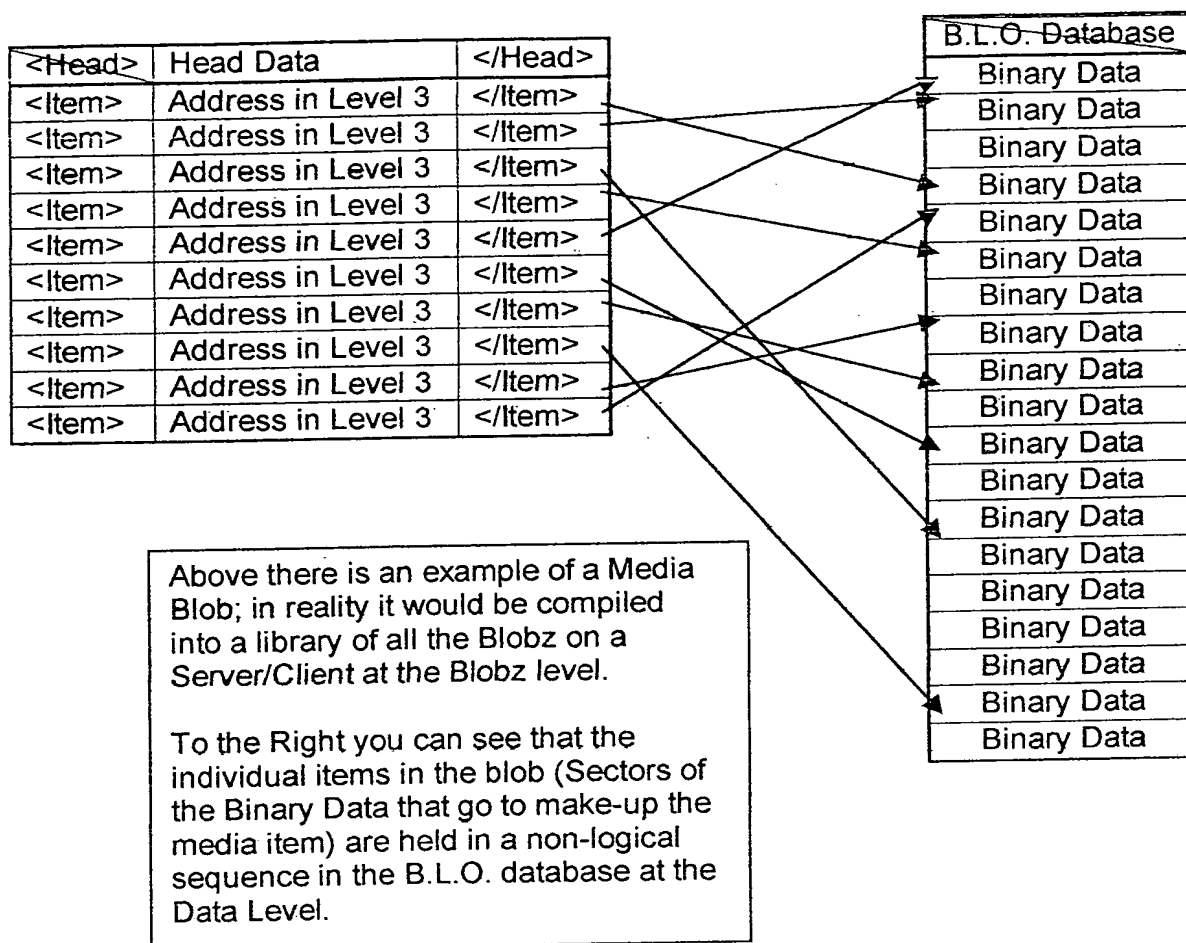
Level 2 – Blobz

At this level there is a single library of XML data that can be individually addressed as Data or Media Blobz. These Address the data that is stored in the XML or BLO data libraries in Level 1.

Each Blob contains many addresses for the many portions of the media that have been broken-up and distributed to different parts of the library by the compiling process. This is a valuable level of security as it means that any hack would have to be a powerful, executable device. A simple decoding of the format would result in a stream of gibberish.

Fig
3.

Data Scheme – Detail – Media Blobz



Identification, Verification and Validation

The essential security of the system is the way in which the solution is aware of what data is available to the user. This is done through a system of identification, caching, verifying and validating.

End-User Identification

The ability for the Home Server to correctly identify the user is the central pillar of the security system. Our solution is uniquely placed to enable user identification because it is used as a total data management system.

If a user is using the solution as a way in which they can handle all of their personal information, that information can act as a 'fingerprint' unique to the user. Rather than relying on watermarked hard disks or complex encryption processes or a further layer of passwords and logins, The Essentially Different Blobz Solution relies on randomly sampling the Home Data on each device and comparing it with the original data on the Home Server. In this way, if an end user wanted to play someone's music they would have to live his or her life.

There will be an allowable drift of in the region of 10% per calendar month to take account of any activity since the last time an update occurred and the update timings themselves will form a part of the sampled data. This system is possible because data will rarely be deleted, it will be archived; also, if data is marked for deletion the request is not executed until the next network connection.

With this system, simple security lapses can only occur in the following ways.

1. The device can be stolen. In this eventuality, the service can be turned off by the end-user from their web interface.
2. The whole of the relevant file system can be copied from one device to another. In this case, the new installation will function provided the transaction was completed correctly, however the old installation will not be able to verify because it lacks the entries for the latest updates. This would be one way for users to transfer their service to a new device. Essentially Different will provide an easier, web-based method!

Caching

The default position for all user Home Data will be on the Home Server, all other positions are intelligent caches. This means that all the other copies refer back to their master to verify himself or herself as valid and update themselves.

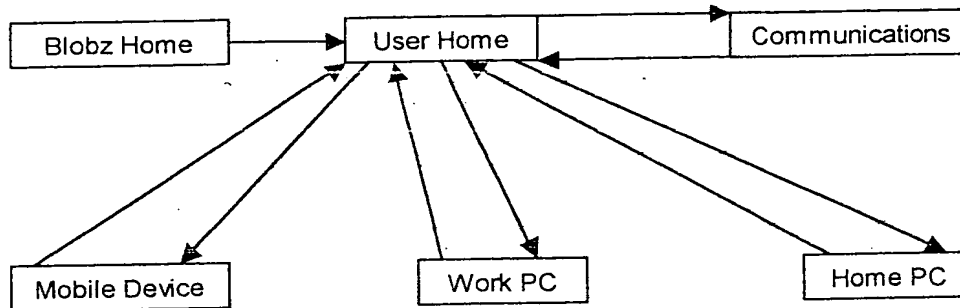
All data, whether Blobz or User Created, shares the same data architecture, all that differs is its Home Address. Both types of data are encoded with their Home Server address and how often they should be updated.

Data that is rights protected is cached in the same way as less secure documents, the security issue does not arise until the data is accessed.

Data is cached to the client program automatically while there is an open session in progress. There will be user-definable settings to ensure that these processes do not interfere with urgent transactions.

Fig 5.

Data Scheme – Detail - Caching



The essence of the caching scheme is that the data is held on a single home server, all other locations are caches.

At the Internet level, the user's home server accepts input from the home servers of the assorted public Blobs the user may have chosen (Blobz have their own home server) and also inputs and outputs from communications.

Via temporary Internet connections, the data can also be cached to local devices such as those illustrated above. Changes made to the data on the local devices can also be made to the home data.

Verification

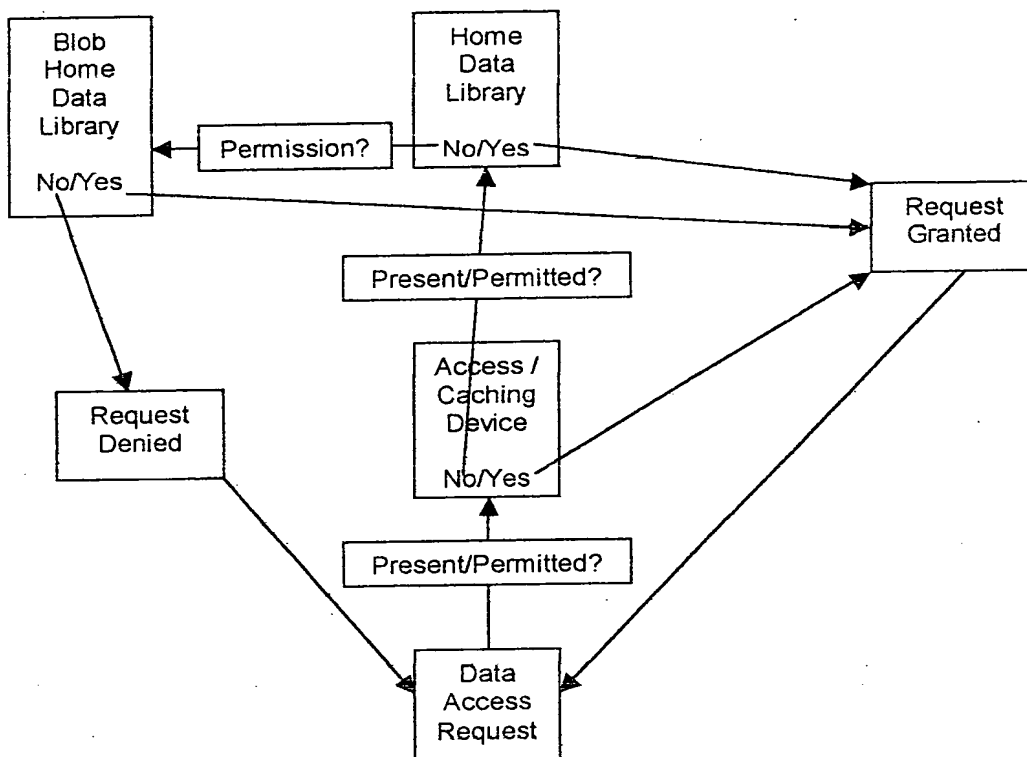
When a resource is accessed, the Operational Database in the client program is consulted. If the resource's unique code is in the authorised database then the resource is clear to be accessed.

If the code does not appear in the operational database then a connection to the network must be made in order to access the data. Every item has a Home Server and the master copy of that data has a list of those entitled to access it. If the user does not appear on this database then the request to access the data will be denied. An opportunity to request access the data can then be made. If the user suspects there has been an error then the concern can be encapsulated in a message.

Note: This system only applies to rights-protected data or data given restrict access permissions by its creator. We anticipate that the majority of data will be publicly available.

Fig 6.

Data Scheme – Detail – Verification



When an access request is made, the access device first checks whether the Blob is present and permitted in its home data, if it is, the request is granted and actioned. If it is not, it will attempt to connect to the network. If the Blob is not present/permitted on the home server, it will check with the home server of the Blob to see if there is access permission for that user. If there is not, the request will be denied.

This process will rarely happen at the time of accessing; at that time it would be considered a part of the graceful degradation systems. The process will happen on a periodic basis (at a timescale set by the Blob developer) to ensure that permission/presence is constant at the device of access.

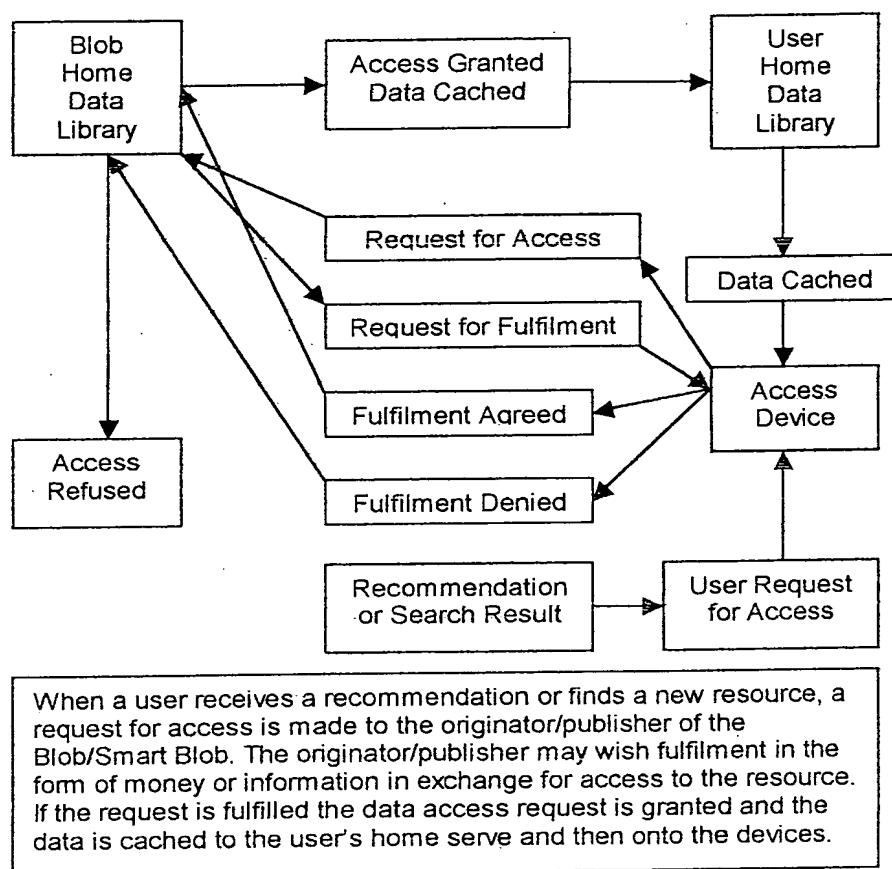
Validation

Central to the principle of the community aspect of the solution is the ability for end-users to assist in the marketing of resources by referring other end-users to the resource. This works in a similar way to file swapping, exchanging or trading except all that is transacted is a live link that enables the referred user to evaluate the resource.

The link, when received via the internal messaging system points to the location of the Blob on its Home Server a variety of rules for the accessing of the data are encoded into the Blob. If the criteria are met (which can obviously include many forms of payment) access is granted.

Fig 7.

Data Scheme – Detail – Validation



The Meta Data System

From an end-user perspective there will be no conventional file or addressing system for his or her data. External Data that is not a part of the user's Home Data will be represented by a link in the case of a communication or a conventional web address in the case of a resource being accessed occasionally or for the first time in exactly the same way as with the existing web system.

Once data has been imported into the network, connected to it via a live link or created by a network service tool, it will be tagged and classified using a system of meta-data. Navigation

and search capabilities will be greatly enhanced by the ability to classify a document or any other item of content in a way that means more than the existing system of files and folders.

The same rules apply for user created content as for any other item of data; if it is a single item it is referenced as a Blob, if it is a composite of many items it is a Smart Blob.

Command Library

The functionality of the network and its ability to interact with the services connected to it will change rapidly. To ensure that both the Home Servers and the Client applications are always up-to-date, there will be a Command Library database.

When new functionality is added, the Master Server automatically updates this database and any new executable files will be passed down the caching chain.

It is an important part of the security of the system that data is only accessed by its own set of executables; thus, in order to access data on a remote server, your command library instructs their command library which accesses the data and returns the result.

The Applications

The application layer of our infrastructure will be capable of being Certified as a 100% pure Java solution and will be built using re-usable JavaBean and Servlet Components.

The JavaBeans component architecture is a platform-neutral architecture for the Java application environment. It's the ideal choice for developing or assembling network-aware solutions for heterogeneous hardware and operating system environments--within the enterprise or across the Internet. This gives us more opportunities to sell via ASP services.

JavaBeans component architecture extends "Write Once, Run Anywhere" capability to reusable component development.

Below we have detailed the modules to be developed in the first instance.

The Master Server

The Master Server is the tool that controls the intelligent caching of the executable files that make-up The Home Server from Essentially Different to our direct clients and ASP partners. It is also the tool that controls the caching of Meta Data from our clients and their end users.

This system will not only hold the master copies of all of the executables but will also hold the master command library. The Master Server is capable of updating the network of Home Servers and turning them off if necessary.

Captured Meta Data on who is using the service and how will be used to target future capabilities more precisely.

The Home Server

The Home Server is the heart of The Essentially Different Blobz Solution; it is a Java 2 Enterprise Edition compatible executable program library whose job it is to monitor and police the flow of data to and from a Home Data library.

The Master Server caches the programs to our business client's server and it is verified in exactly the same way as the data held on the solution. All of the executable files and the commands can be updated from the Master Server.

This is the central platform onto which all of the services on the network depend. It will also allow that data to be accessed by clients ranging in 'thickness' from other ED servers to mobile telephones via appropriate protocol servers.

Note: Although all data is kept by default on each user's home server, our clients, who will be offering this service to end-users will have the option of sub-contracting storage to third parties running the Blobz Solution server. In this way we can distribute data around the globe in order to increase speed and avoid bottlenecks.

The Development Module

Each of our business clients will have access to a range of tools on the Master Server, from which it would be possible to deploy connectors to enable data to flow to and from the network. Many of the solutions developed in this way would be cacheable to the client's server.

Below we have described a few of the initial tools that will be available.

The Communications Connector

This is the system for connecting a communications solution to the network.

Through this connector, two-way communication with another solution will be possible via a number of pre-determined steps.

1. The command required to execute a handshake will be embedded in the relevant section of the command library available to that user.
2. Addressing data will be made available to the communications solution.
3. The status of the requested interlocutor will be relayed back to the user in the case of real-time communication.
4. Availability of service information will be relayed back to the user in the case of location specific systems such as Internet faxing or SMS messaging.
5. Message content will be relayed to the solution in the case of encapsulated messaging. In this case, the message contents must be preserved within the solution to form part of a journal of activity.
6. In the case of real-time communication, the relevant interface will be accessed.

Data Blobz Tool

Data Blobz can be encapsulated databases. This tool will be charged with capturing data from existing sources via a proprietary connector set, building new databases and encoding them for distribution on the network. Connections can be live or static.

This will also be a third-party tool that enables new users to migrate from their existing PIM and to add simple data such as contacts, tasks and events until such time as Blobz become so ubiquitous as to make this automatic.

The fundamental aspect of this tool is that it uses a JDBC connection to extract data, and then publishes it as a compiled/encrypted xml document.

The Data Blobz Tool will also encode the information about access permissions and verifications.

Media Blobz Tool

Media Blobz can be animation files, sound, bitmapped pictures such as photographs or video.

The main aspect of this tool will be that it will encode the finished product in a form that will enable it to become a binary large object within Level 1 of the Data Scheme.

Smart Blobz Tool

This is the interface that end users will use to string together tasks and resources to form composites or sequences. The first tool to be made available will be the procedure tool that will enable Blobz to be strung together to form a time-line. This will be used for creating projects, interactive trainings and allowing the timed release of embargoed data.

Other utilities will swiftly follow that will allow live interaction with records within a Data Blob.

The addition of Natural Language Processing and Reasoning Engines to the network at a later date will multiply the network's capabilities. Such interfaces will be made via this tool.

Portal Connector

This connector enables a web designer to access data held on a Home Server subject to permissions.

Because of the fundamental architecture of the solution, every item of content on the Home Server, be it text, photographs, audio streams, video streams forms a 'Blob' of one type or another; an individual piece of information that can be referenced, linked and displayed in any number of different ways by incorporating it in a Smart Blob.

In this way, data can be displayed in unique ways by publishing the Smart Blob to a web page. A good example is that when an article is published on the site, the Data Blob that contains the text of the article is actually only a small part of the Smart Blob that has been published to the site. At the bottom of the article, there could be a link that encourages counter articles or messages of support. These Data Blobz in the case of text or Media Blobz in the case of voice or video clips would then become the subsequent entries in the Smart Blob. The article would then become a valuable resource of opinion.

Another possible use would be for a series of related pieces to be released over a period of time. In this case the times hard-coded into the Blob would be the times the content should be released. This would require no further input from the author.

Commercial Tool

This tool will be the interface that will enable creators of network content to give away Blobz or sell them through an e-commerce partner (see Future Services).

The structure of this tool will be simple; it will merely allow entries onto the central validation/caching database and enter meta-data into the central archive.

Statistical Analysis Connector

This tool will be used by Essentially Different and available to any business client. This tool will be used to monitor and record any downstream activity. It will plug into the Home Server so as to reduce duplication of functionality.

It will consist of a simple set of tools that will produce a Data Blob that contains their results.

End-User Interfaces and Client Applications

The initial end user/business client interface will be via a dynamic html web page. In addition to this, we will be selling the option to cache functionality and data to local machines for convenience.

Registration by end-users will be done via the Master Server. There will be a rigid procedure for registering for both the on-line and client device version that can be extended by each individual network service provider depending on the data they need to gather from their end-users.

What is described below is the standard functionality. Some devices may not have the graphical capability to display the data as illustrated; for instance, mobile telephones may only be able to show the now/time display OR the display panel OR the menu hierarchy. Should this be the case, care must be taken to design an ergonomic navigational model.

A standard feature to be discussed will be that of persistency. The implications of persistency are that the interface and all of the work in progress on that interface are memorised over time. In other words, a half typed message will remain half typed when the user exits the service; upon their return, the message will be exactly where, and in the state, it was left. This is so for two reasons, the first is that any other method is an ergonomic violation; the second is that in order to retain data security, the user will only be allowed one active open session. It is important that it is as easy as possible to both open and close a session at short notice and the ability to simply leave the work as it is is the easiest way of encouraging this.

There is an issue with persistence when it comes to integrating software tools with the service. For obvious reasons it would be logical for these tools to also operate persistently but very few currently support this system. Many users have developed working methods that include such system violations as experimenting with unsaved documents and then not saving should the experiment be unsuccessful. The Essentially Different Blobz Solution will have to formulate an automatic working strategy to take the place of methods such as these; one possibility being turning all documents into Smart Blobz with safe points linking revisions. This system would also work in an environment where one document is shareable between many users; if an undesirable modification is made, the document could be reverted to a previously agreed state. This would also open-up the possibility of sharing/allowing access to documents on a frozen or update-able basis.

All interfaces to the service will be built in the xml/xsl languages. It should be noted that the ability of a device to display the interface might depend upon the presence of a parser. Any late generation Internet browser can display the PC based interfaces (including the web based). Should the appropriate protocol server be available, this interface could be translated into html/wml for viewing by legacy/mobile devices.

The Interface

The navigational/executive device that forms the interface between the software and the user will appear the same regardless of access device. The central feature being a 'Now...' button that hovers over a time chart that can be serially calibrated as representing minutes, hours, days, weeks months etc. This is a way of orienting the user in time in a way that has not been done before; it will show the user what tasks should be performed, what outside influences (such as visits, events etc.) are imminent and if any element is overdue. When activated by a mouse click, a key press, an active cursor positioning or by a biometric system, a menu appears that lists the options for interacting with the system at that time. The options will be described in a way that makes them appear as requests preceded by the 'Now...' inscription on the button. Examples could include the following:

- ... I want to listen to music
- ... I want to communicate
- ... I want to create a project
- ... I want to work on my projects
- ... I want to find information

These are only examples and the system will be capable of supporting a massive range of requests because each request leads to a menu that will consist of more and more detail until the required outcome is reached. For instance, Now... .. I want to listen to music will allow the user to search their home data or acquire new media by presenting choices based upon the users preferred criteria such as artist, mood or genre. Now... .. I want to communicate would first allow intelligent searches by name, company, grouping, project etc. and then present ways of communicating such as text chat, voice, video etc. depending on available hardware and services.

There will always be at least one visible data screen that either docks (probably to the right of the time/now display) or floating (most likely with multiple displays) depending upon the graphical ability of the access device. In default mode, this screen will display data about the currently selected data item in the time/now display. It will also show relationships with other data (i.e. as a part of a Smart Blob) in the form of a linked schematic or a critical path. Other data screens will become browser windows or displays to show video or visual media related to audio or text-based media.

This method of interfacing with users is important because it allows seamless integration of intention with action and allows massive quantities of data and services to be interacted with via a single, simple and ergonomically sound method.

The command chain should be to the greatest extent possible user extensible, there should be a range of commands and schemes that will enable more advanced users to customise their interface.

The range of user commands available will always depend upon the range of data and services available to the user. The combination of the unified command library described below that deals with the executable programming commands and the set meta-data system means that generalised commands could be simply incorporated from a central resource. This would also offer opportunities for artificial intelligence.

In addition to the executable schemes, the interface would also be capable of being 'skinned' in that its appearance could be changed by applying a Smart Blob that contains links to the required graphics along with colours, vectored shape descriptions and any other elements

required. The standard navigational device of the 'Now...' button over the time display must remain along with the direct link to the display panel.

The Command Library - Overview

There will be three initial client choices. All will be capable of the following functionality mentioned here in outline. The actual Library will be a compiled database.

1. Maintenance of Contact lists, Diary, Reminders etc. Fundamentally, all will be Blobz. This means that if one of your contacts is also on the network and has granted you access to his or her data, it will be dynamically updated should any details change and automatic, interactive co-scheduling will be enabled.
2. Intelligent caching of data to and from the home server.
3. Ability to intelligently order schedules according to predefined urgency, importance and procedure.
4. Send and receive electronic communications in the form of limited e-mail/SMS protocols. All messages will be incorporated into the audit trail and be referenced to recipient and resources. No document/file attachments will be permitted; sharing will only be possible via the publishing/caching system.
5. Allow communication through any other method as allowed by the host device, i.e. voice through a multimedia pc and video conferencing where facilities exist. Initially the conduit for this will be third-party applications.
6. Faxing will be supported by the core application via an Internet system should a partner be able to fulfil; conventional faxing facilities would be available where a suitable device exists.

Client Programs

Java

It is important to the success of Blobz that the data and functionality be available across a broad range of platforms.

For this reason we have chosen to develop our desktop caching system using the Java 2 virtual machine.

This application will feature the following functionality in addition to that mentioned above.

1. Initialise the playing of Media Blobz through third-party solutions that support streaming mpeg. Plug-ins will be developed at a later date.
2. Display Home web content via any of the recent generation of web browser. In most cases these are already installed on the machine.
3. Access to the network via installed devices such as microphones and web cams.

Palm OS

The Palm BIM will operate in a similar way to the Java client but obviously lack the device functionality. As there is no Java Virtual Machine for this device, native executables will be written. The Command Library will still be cached in the same way.

It is essential that all the standard short-cut buttons and icons on the machine lead to the full Blobz functionality. This feature will not be activated without the permission of the device owner.

Caching will be performed using the standard Palm hot-sync, obviously requiring an open Internet connection.

Palm caching will be independent of any cache that may be on the host PC; it will communicate directly with the Home Server.

Interface Channels to The Blobz Solution

EssentiallyDifferent.com

Essentially Different will operate a web site that will be designed to elicit organisational sales.

Intranet/Extranet

Closely tied-in with the above will be a system for taking customer enquiries, administering the sales process and automating customer service, this interface will include dynamic interaction between the client and the Essentially Different technical support provider.

The Development Module

There will be an interface that connects all of the available tools with our technical and customer service provider. From this interface, our clients will be able to add or design functionality for their ASP servers. Details are included in the dedicated section above.

Blobz.com

This public site will aggregate all publicly available services and Blobz into a single resource rather like download.com does for programs. It will be launched some time after initial development, probably with the help of a partner.

Usage Studies

In order to illustrate how the user will interact with the solution, we have prepared a number of schematic walkthroughs.

Accessing Home Data

In order to access home data, the user would have to perform the following tasks:

1. Activate the 'Now' button and select an option such as;
 - a. Play Music
 - b. Watch Video
 - c. Read Text
 - d. Search Data
2. The system searches the data that is
 - a. Cached on the local device
 - b. Available via any network connection
3. A list of the available data matching the description in the request is made available to the user. Further searches may be enacted by applying temporary filters/orders to the data such as date, alphabetical order etc.
4. A selection is made from the list.
5. The Smart Blob/Media Blob/Data Blob that controls the item selected is executed.
6. The locally cached executable checks the verification scheme in the Blob has been adhered to. This will be the case if there has been enough time connected to the Internet for the Blob to have been verified (verifications take place sequentially starting with the most urgent during free times in network connections). If the Blob is within its verification scheme, the resource is accessible. If the Blob is attempting to

operate outside of its scheme, a connection will be requested. If the criteria set by the publisher (payment, updated personal information etc.) is met and logged on the Blob's home server database, the verification will take place at that point and the resource will become accessible.

Obtaining New Home Data

1. Whether by recommendation, message or selection, the user activates the link to the recommendation; they are presented with a page detailing the requirements for accessing the resource. This would typically include payment, supply of personal details or possibly some form of resource swap.
2. Once the criteria have been met, the publisher's home server displays a link.
3. When that link is activated, the user's home server is contacted and the addressing details for the new resources are added to those already in place. This process is referred to as validation within the solution.
4. The user will then be offered the opportunity to decide which devices the resource should be cached to and its priority is, should there be a suitable device available and should the publisher allow that option.
5. If the user is accessing the Internet through a device capable of caching the resource, there will then be the option of caching now or later within the standard caching scheme.

Accepting a New Contact

It will be the case that through their project, work or social activities, a user may wish to add the contact details of another user to their contacts list. As with all the data on The Blobz Solution, there is only one master copy of each piece of data, which means that the user holds the master data on their home server and all other copies whether on the users devices or in other people's contacts lists are intelligent caches. The procedure for adding one of this type of contact to a user's data is as follows:

1. Either a request to be added to your contact list will come in the form of a link appended to a message or by a link on a shared resource such as a web page, media or a project item such as an event in a calendar. When activated, they are presented with a page detailing the requirements for adding the contact. This would typically include a promise of confidentiality, reciprocal supply of personal details or possibly some form of resource swap.
2. Once the criteria have been met, the requested party's home server displays a link.
3. When that link is activated, the requester's home server is contacted and the addressing detail for the new resource is added to those already in place.

As with all data on the solution, contact details are subject to periodic verification. When the owner of the contact changes the details, the changes will be mirrored in the cached lists as and when the verification takes place.

Inviting a New Member

Should a user decide that they would like a contact to be a part of the network of users, they can invite new users in the following way.

1. Both the client applications and the web interface have the ability to send an e-mail to the person that includes a link to a dynamically created web page that is individual to them in that it can assemble data that the referring user has indicated as being of likely interest to the referee.

2. This page shows the benefit to the user of being a member of the solution. If the potential user is interested, they can supply the pre-requisite personal criteria and become a member of the service.
3. Once the new membership has been validated, the new contact will be added to the referring member's contact list during the next verification.

Building a New Project

A project is nothing more than a series of tasks arranged in a set order; each task is a Blob and each project is a Smart Blob. A Smart Blob can be built to manage a project by the following method.

1. Activate the 'Now' Button and select a suitable option such as:
 - a. Start a New Project
 - b. Organise My Tasks
2. Some overall data will be entered into the resultant form, this will include what you are aiming to achieve, a rough description of how you are going about it and what you will need by way of resources such as data and locations.
3. Once this data has been entered, there will follow a 'Wizard' that will enable the user to enter as many steps as will be required to complete the project.
4. After every step has been added, the user will be asked if the task requires any other tasks to be completed. If that is the case, the user can either add the reliant task next or select it from a list if it has already been added. The system will only allow logically allowable tasks to be added; in other words, the system will stop users from adding two tasks that rely upon each other.
5. Tasks can also be added which are not necessarily a part of the critical path set out above. These tasks can have a place in time, in which case they are called events or appointments. They can also have no fixed time but simply float in the project. Into these and all other types of task, links can be placed that relate to data resources and contacts that may be required.
6. The final step is the formulation of a statement that answers the question 'How will you know when this task has been completed?' and will become the 'evidence check' that ensures that the project has ended.
7. Once this evidence procedure has been decided upon, the project can be validated and then transferred to the users home data at the time of the next verification.

Delegating a Task

Once a project has been validated, individual tasks can be delegated to other end users. This is done in a similar way to inviting a new member and the two procedures can be sequenced if the delegate is not already a network member.

Additional Uses

- Secure storage of data.
- Secure Intranets.
- Portal Building.
- Interactive communities.
- Multiple user collaboration.
- Distribution of software (boxed or downloaded)
- User Guides.
- Planners, for example ; party planners, wedding planners, holiday planners etc.
- Shopping. Interactive shopping guides. Can be integrated with party planners, wedding planners etc.
- Interactive Game Playing

- Education and Revision
- Research
- Legal – Secure access to legal records etc. on-line
- Medical – Secure access to patient and drug information.-----
- Accounting – Integrated systems.
- E-Commerce